INDEX TO VOLUME 126

of space makes it impossible to give many cross references, or to enter a given reference in more than one place. Each article is accordingly entered at the place where it is believed it will be most found. In every case the general subject should be sought, rather than the supposed specific title of an article. Frequently articles are not indexed under their specific titles at all: e. g., the article per of Decorative Hardwoods' will be found indexed under the classification 'Forest and Forest Products,' and under the specific entry 'Rosewood,' In every case it is the endeavor thus to place that it will be found by one seeking references to the subject discussed in the article. We call special attention to the classifications 'Household Appliances,' 'Machines and Machine Tools,' and the products,' and proven,' "Machines for Special Purposes,' etc., in which many items will be found whose location otherwise would be very puzzing, and which can be examined item for item in the search the entire alphabet. The hort notes that comprise the columns of text on the advertising pages are indexed only by their general headings, and not specifically for each note. The asterisk (*) indicates that the article in question is illustrated.

in a doubtful entry with much greate	specifically for each no	e s
1	Ralloon and airplane carrier #96	7 1
A DVERTISING.	Balloon and airplane carrier*26 Bombing and bombing sights*4 Catapult and turntable*21 Dirigible sheds—making two into one*24 Dirigible stresses	9
Fan that advertises*263	Catapult and turntable*1 Dirigible sheds — making two	6
DVERTISING. Fan that advertises	into one*24	0
AND PLANT BIOLOGY.	Hangar doors, roller bearings	
And PLAN States 103 Affalfas 103 Bat guano in Austria 373 Corn, burning 244 Cotton picker *179 Cotton picker and ventilation	for*26 Helicopter progress*13	8
Cotton picker*179	Helicopter progress	8
Cow stable, heat and ventilation	ground22	8
Fruit ladder, mechanical *271	Mail plane, why the	8
for	Mooring airships, the problem	
Osts, nutritive constituents128 Organic chemistry of soils189	of 400 Racing aurships, the problem of 400 Racing and what it means, airplane 1010 Review of the year 1921 20 "Roma," the 25 Soaring birdmen 233 Spraying trees from the air *33 Timing disk	
	Review of the year 1921	
Potash industry, to save 378 Puterizing plow 202 Senside vineyard	"Roma," the*256	3
Seaside vineyard*107	Spraying trees from the air. *333	3
Sprinkler for golfgreens*48	Timing disk	1
Tractors: See MOTOR TRUCKS.	Wing of bird-like lines*341	
Sprinkler for golfgreens. *48 Tractors: See Motor TRUCKS. World crops for America. *226 IR liquid	В	
INITIALS.	BICYCLE drive	1
Bat pest in Ceylon*128 Four-footed transatlantic pas-	BIOGRAPHY (including OBITU-	
sengers240	ARIES). Hoster, T. G	
	Shackleton, Sir Ernest*274	١,
in	Spencer, Christopher M253 BIOLOGY.	1
Broken Hill skull*90 Eskimo, ecological relations of	Blood stains photographing #199	
	Exercise; effects on blood174	
Modern stone-age men337 Our common ancestry164	Heredity, physical basis of *177 Internal secretions, effect of 266	1
ACHAEOLOGY.	Ductless glands 330 Exercise: effects on blood 174 Heredity, physical basis of 177 Internal secretions, effect of 266 Memory, electrical theory of 249 Populations and property of 188	
Greek lands, recent discoveries		
Egyptian queen, tomb of an. "243 Greek lands, recent discoveries in "36 Mexico City find. "114 Palimpsests 203 Sun worship 333 Wiking queen, yacht of a. "174 Wall of China, great 444 Weights and measures, 18th	Rock dust poisons human body 163 Thirst, effects of 11 Tides, biological effects of the .237 Twins, causes of 17 Vitamines, copper may harm .332 BOTANY, See PLANTS.	I
Palimpsests203	Twins, causes of	1.
Viking queen, yacht of a*174	BOTANY. See PLANTS.	F
Wall of China, great *404		
Weights and measures, 18th eentury*183	Detroit River bridge*88 Howe truss timber bridge*321	F
construction.	Hudson River bridge 99 St. Mary's bascule, failure of*187	1
Brafting pen, art of using 63	Swing bridge, support for271 Trolley cable in place of bridge. *45 BUILDING CONSTRUCTION.	1
Drafting pen, art of using 63 Draftsman, short cuts for the *339 Freehand drawing in the Indus- trial world*184	BUILDING CONSTRUCTION.	
trial world*184	Bricks in France, home-made. 29	
Paintings, examining with po- larized light*33 Submarine artist*319	Clay and straw, emergency	
Submarine artist	houses of*335	
Comets that have lost tails*14	Auditoriums, outdoor	
Havens month by month, 59, 136, 207, 276, 346, 416 Mechanical sun and moon*245	Garage temporary dwelling*111	
Mechanical sun and moon*245	Garage temporary dwelling"111 Lumber of steel	F
Bereury, perihelion of	Moving front of church*321	1
Photography of stars in day-	Shingles, copper	ì
light	Straw, houses of247 Washington theater tragedy	
	Windows, windproof plate- glass	
Star distances	BUSINESS. See INDUSTRY AND	
MOMIC STRUCTURE. Intion pictures of atoms. *572 Utilization of atomic forces. 121 Within the atom. 199, 306 MITOMOBILE ACCESSORIES. Air takes place of metal springs. 268 Airtude indicator. *63	TRADE.	
Utilization of atomic forces121	CERAMICS, GLASS, ETC.	F
WITOMOBILE ACCESSORIES.	China and glass, specifications	
Air takes place of metal springs.268	for242 Glass, specifications for245	
Ash receiver on dash271	CHEMISTRY. Acid, safer handling of*331	
Bumper that locks the car*206	Atomic structure: See separate heading.	
Crane, portable	Calcium aluminates comenting	
Altitude indicator *63 Ah receiver on dash *271 Sumper and tow combined *220 Sumper that locks the car *206 Cotter puller	qualities of325 Cellulose with aid of chlorine. 305 Garbage erisis	
Casoline gage for dash269	Garbage crisis	
Glove with signal light *340	Melium, industrial production	
Gasdine gage for dash	of*308 Osmosis*171	
Bose clamp	Poison gas, peace-time jobs for. "326	
Jack for repair work. *341	Potash. essential for plant growth 9106 Radioactive mineral, new340 "Service of the Chemist." 56, 129, 201, 275, 343, 415 Sewage: the price of civiliza- tion 9125	-
Jack like hydraulic press*206	"Service of the Chemist,"	F
Lamps that turn with wheels. *64	56, 129, 201, 275, 343, 415 Sewage: the price of civiliza-	
Piston aliner	tion	G
Power take-off	Varnish, specifications for 94	
Spring oiler*272		GI
Tire-building form *204	COLLEGES, what is the matter with	
Valve-grinder*133	CORRESPONDENCE.	
lamp that turn with wheels. "64 lired car. new departure for .272 liston aliner "134 lower take-off "270 liner house to save the save take-off "270 liner, hammer-blow "411 lire-building form "204 lake-grinder "133 lindshield wiper, chemical270 lines hamilton in German cars .407	OUT *410 CORRESPONDENCE 277, 345, 416 CORRESPONDENCE trays *342 CRIMES, planning big 387	
Aluminum in German cars407 Auto and plane in one*202	CRIMES, planning big387	
Auto and plane in one\$202 Axles, innovation in\$411 Car. the 1922	DAMS See WATER POWER AND	
Car, the 1922	DAMS. See WATER-POWER AND SUPPLY.	
German design, trend of113	DIAMOND tests*193 DIVING. See SALVAGING.	
Gerschift innovations	DIVING. See SALVAGING. DRAFTING. See ART. DYES AND DYEING. See CHEMIS-	
Intake, compression, power and	TRY; TEXTILES. See CHEMIS-	ce
Orphans of the road238	E	GC
Rumpler car 82 *105	ELECTRICITY. Battery charger *413	GE
Bervice station, lesson of the 307	Battery charger*413 Burglar alarms, electric195	-
The and tube specifications202	Canacity effects in inductance	H
TATION See MOTOR TRUCKS.	coils	-
	Generator limits	
Aerofoil data	Metal-melting applications *33 Notes72, 151, 217, 287, 357, 423 Radio: See separate heading.	
pune, vest-pocket*412	Radio: See separate heading.	

short notes that comprise the columns. The asterisk (*) indicates that the a	of
items will be found whose location othe hort notes that comprise the columns. The asterisk (*) indicates that the a state of the state	21 21 21 21 21 25 25 25 25 25 44 44 49 79 77 57 57 57 57 57 57 57 57 57 57 57 57
Oppau disaster198	
FIRE AND FIRE PREVENTION. Taking fire hazard out of oil tank .108 FISH AND MARINE LIFE. Carp to goldfish, from .188 Crab, hermit .8895 Menace to fish life .330 Miracles of fishes, modern .311 FOOD.	ı İ
FOOD. Artichoke gardening *181 By-product utilization in meat plants *385 Chicha nuts, breaking shells of .303 Cocoa and Cacao . 123 Corn, burning 244 Fish, freezing 324 Fish, freezing 325 Packing in inert gas . 255 Production and consumption .*5, 6 Sweeteners, natural and artificial . 124 Tea from holly . 455 World crop for America . 226 FORESTS AND FOREST PROD- UCTS.	
World crop for America226 FORESTS AND FOREST PROD-	
Cork, artificial Drill for the tree dentist. 259 Forestry, necessity of 364 Giant trees in olden days 379 Lumber losses, lessening 422 Roadside trees, irrigating 413 Rosewood 254 Trees, measuring growth of 173	1
Atmospheric gas burners 9 Boiler-furnace refuse, salvaging fuel from	
Corn, burning 244 Gas-burner design 178 Gasoline, two-cent 386 Nielsen carbonization process152 Oil tank; don't paint it red389 Pest and muck investigations118 Petroleum from cota oil. 93 Petroleum wastes and savings254 Power gas from sewage. 80 Resources at a glance*85, 86 Sewage gas power from .413	1
Power gas from sewage	1
Sewage gas, power from	I
GASOLINE. See FUELS. Folkestone cliff improvements190 New world	ı
New world	h
Earthquakes, forecasting *381 Elements, proportion in earth. 15 Glacial epoch, last	
Tropical geology and engineering Tuolumne canyon 4000 feet deep 175 OVERNMENT expenses, distribution of 297 GRAVITATIONAL absorption .403 EUNS. See ORDNANGE AND ARMOR.	N
IARBORS AND DOCKS. Argentine floating dock	

Pouring concrete under water. *2 Steel joint replaces rubber dredg-
ing sleeve
HEATING, HOUSEHOLD. Boiler, house-heating*3:
Furnace looks like phonograph. Heater and fan in one
Pouring concrete under water. Steel joint replaces rubber dredging sleeve HATS, hot-weather Boiler, house-heating Boiler, house-heating Furnace looks like phonograph. Heater and fan in one Fipleless heater Solar stove of tinplate Solar stove of tinplate Systems, heating HOUSEHOLD APPLIANCES AND
Solar stove of tinplate*3- Systems, heating*1
Systems, heating
Air purifier
Broiler*272, *41
Catch-all for the kitchen*20
Dishwasher*6
Egg beater, faucet-power*41
Gas, German stunt for saving *41
Key, flexible
Lock that fits every door*20
FURNISHINGS. Air purifier *33 Alarm clock, general utility. *24 Broiler *272, *41 Butter server *41 Catch-all for the kitchen. *22 Christmas-tree lights *18 Dishwasher *18 Dishwasher *18 Egg beater, faucet-power *41 Faucet fountain *19 Gas, German stunt for saving. *41 Key chain that stretches 26 Key, flexible *25 Knife and fork in one *41 Lock that fits every door *20 Lock to carry with you *20 Mop wringer *20 One-piece living-room suite *13 Orange peeler *6
Orange peeler
Orange peeler . *6 Pot that cannot boil over . *13 Reading glass, self-supporting *13 Scent distributor . *27
Reading glass, self-supporting, *13 Seent distributor Scientifically designed work- chair Csissors with detachable blade. *20 Screw-lock for doors. *34 Serving for the state of the serving for the serving f
Scissors with detachable blade*20
Serving tray plus stove stand-
Shoe tree
Skins and seeds, removes*41
Soap slicer*20
Serving tray plus stove standard
Washboard, improved*206
Wash fountain*62
INDUSTRY AND TRADE. By-product utilization in meat plants
By-product utilization in meat
Gas masks, peaceful uses of327 Jugoslavia resources115
Krupp works, injustice to312 Learning while earning*199
Legal adviser in foreign trade, 19 Money goes, where the *297
Money in Italy, emergency*335 Stoking the employe*329
Stoking the employe *322 Theater, applying lessons of industry to *228 Wasteful industries, our *300 World's wages *869
Wasteful industries, our*300 World's wages*869
Caterpillar, vegetable
Change of proportions164
Design patents 34 "Inventions new and interest- ing"61, 132, 203, 268, 339, 411 Invention the master key to civilization 238
Invention the master key to
Invention the master key to civilization
Notes76, 150, 216, 286, 356, 426 Patent Office needs. 98
Patent situation viewed by judge.379
"Recently patented inventions," 66, 138, 208, 278, 347, 417 RON AND STEEL. See METALS. RRIGATION. See AGRICULTURE;
RIGATION. See AGRICULTURE; WATER-POWER AND SUPPLY.
K
ILN circulation, testing*263
L
EATHER. Tannery, a tiny
GHT AND COLOR.
Gray, what is?
Measurement of skins
Ultraviolet, glass opaque to590 UMBER. See FORESTS AND FOREST
1 100 00 101
M ACHINERY AND POWER.
ACHINERY AND POWER. Bearings, ball vs. roller
Diesel engine wins its way*390 Fluid waves, transmitting power
in*320
Gears, duraluminum
Fluid waves, transmitting power in \$220 Forty-eight speeds \$127 Gears, duraluminum 88 Speed as factor of power. \$337 Steam engine, high-speed crank-less . 1199
less
ACHINES AND MACHINE TOOLS.
Blow-torch, self-lighting *205 Cleaning shop-work *206 Chain-welding machine, auto-
Chain-welding machine, auto- matic
Cutting fluids
THE
Drawing presses, even pressure in °272 Drilling without breakage, high- speed *414 Drill, portable stationary *269 Furnace, all-around bench*132
Drill, portable stationary*269 Furnace, all-around bench*132

25	Grinder, eccentrie
6	9 Micrometer, inside
2	Sand-blasting small parts*13 Soldering iron with blowtorch.*41
3	Ultramicrometer, recording*11 MACHINES FOR SPECIAL PUR-
0:	POSES. Bottling and labelling machine. *3: Butter-cutting machine *13: Cans, cleaning outsides of. *27: Cigarette-rolling machine *6: Ice machine *26: Kindling-wood machine *26: Seasickness by machine *34: Sewing machine for furriers *64: Typewriter ribbons, home-made. *64: Wood joints by machine *346: MAGNETISM.
9	Cans, cleaning outsides of *27
35	Ice machine
69	Seasickness by machine *341
12	Typewriter ribbons, home-made. 64 Wood joints by machine. 346
33	MAGNETISM. Human beings, magnetism in. *245
12	Scale weights, magnetized33, 123 Testing, magnetic
13	MEDICINE AND SURGERY.
38	Caries in teeth
13	
3	Surgical operations, keeping
2 5	MERCHANT MARINE.
3 0	Diesel engines, large
5	ruca" 7 North Atlantic ice patrol*870 President Harding and American shipping 307
4	President Harding and American shipping307
0	can shipping
2.4	Aluminum economies 203
4	Bell chappers, failures of 192 Copper shingles 414 Corrosion investigations 414 Crank-shaft, broken 63 Duraluminum 196 Electricity in melting 33 Expansion of metals 340 Gases in metals 333 Iron corrosion by carbon dioxide 109
3 9	Crank-shaft, broken63
5	Electricity in melting33
2	Gases in metals
	oxide
	oxide
3	Stainless steel cutlery264
2	METEROLOGY. Atmosphere a giant engine 96
,	Forecasting earthquakes*381 Electric field during storms T
	Thunderstorm spots and en- gineering227
	Atmosphere a giant engine 96 Forecasting earthquakes *881 Electric field during storms 7 Thunderstorm spots and engineering 227 Weather forecasts, unusual demands for 305 MICROSCOPY.
)	MICROSCOPY. British developments, recent*UB Human hair under the microsuscept scope Recording ultramicrometer*115 MILITARY AFFAIRS. See also ONDNANCE AND ARMOR.
	scope
	MILITARY AFFAIRS. See also
	MINES AND MINING. Air for the miners
	Trouble makers and the treaty. 396 MINES AND MINING. Air for the miners
	MOTION FICTURES.
۱	Atomic motion picture*372
	Camera that analyzes motion. "4b Clockwork, combining with 57 Fog: Washing out of studio. "255 Logs of plaster "891 Noises for the movies "390 Projector, miniature "340 Silver from waste hypo "258 Spectacles for the camera "188 Studio, moving a glass
ĺ	Noises for the movies291
	Silver from waste hypo*258
	Studio, moving a glass*387
	BOATS. One hundred miles per hour. *844
1	One hundred miles per hour. *844 Shock-absorbing saddle . *268 Speed-boats, latest in *249 MOTOR TRUCKS AND TRAC-
1	Auto-bus stability*259 Caterpillar development*194
	Electric trackless trolleys*825 Lumber delivery271
	Lumber delivery
ı	Steam truck, British*339
-	Steam truck, British
	MUSIC AND MUSICAL INSTRU-
l	MENTS.
	Strings and where they come
1	Violin, magnetically operated414
1	NAVAL AFFAIRS.
-	Annuals for 1921, naval239
-	Battle cruisers as ocean liners. 99 Battleships, scrapping the*185
1	Japan, construction in
1	Dreadnoughts to scrap metal. *392 Japan. construction in. *25 Nelson's "Victory" *312 Piloting by sound 101 Review of the year 1921 20 Stability of ship 344 Submarine and poison gas 164 Ten-year naval holiday *95, 98 Torpedo. 50-knot *338 Wrecking the U. S. Navy 378
1	Stability of ship344
I	Ten-year naval holiday*95, 98
-	Wrecking the U. S. Navy378

NOTES not separately indexed.
Governmental activities290
Miscellaneous,
71, 145, 211, 283, 353, 421
Queries 71, 148, 218, 291, 353, 421
Queries 71, 145, 215, 281, 000, 421
Wild life288
0
OPERA GLASSES, featherweight *205 ORDNANCE AND ARMOR. Armor, internal diagonal *338 Caterpillar ordnance *195 Germany is disarmed 99
Gun, 18-inch naval
Sight, Both-eyes-open *341
Sight, Both-eyes-open *341 Tear bomb, Police *340
OSMOSIS*171
0000000
p
PAPER.
Blotting paper, tests for 220
Piping of paper
Strength of papers 37
Tile, paper 24
PATENTS. See INVENTION.
PHOTOGRAPHY.
Autographic attachment, new. *340
Blood stains, photographing *123
Dark-room that fits coat pocket*204
Film, utilizing old
Hypo, new use for*124
Roentgen-ray photography *182
Sensitizing solutions393
Winged surveyors*158
Winged surveyors*158 PIPE of fibre
PLANTS AND PLANT BIOLOGY.
See also AGRICULTURE.
Body size and organ size401
Germanation of light-sensitive
seeds
Ground color affects plant growth 192
Inventors, plants as*402
Lichens that eat church win-
dows
Potash, essential for plant
growth*106

0	Winter period stimulates
0	POTTERY. See CERAMICS. *122
1	PSYCHIC INVESTIGATIONS.
ĺ	Human atmosphere*200
8	Magnetism in humans
	Subconscious selves, our323
Š.	Tables tip, when406 PUMPS.
2	Rotary pump*414
-	andary pandy
,	R
1	RADIO.
ì	Broadcasting
ĺ	Lampsocket radio-phone384
	Marconi, reminiscence of 98
	Notes214, 289, 358, 430 Paris conference on regulation.180
	Progress, wireless telephone 91
	Radio central*8
	Radio for everybody*166
	Riddles out of radio, taking the *298 Sending end, at the*232
	Speeding up radio*397
	Stations, broadcasting428
	Telephoning to sea*304 Uncle Sam and radio*375
	Voice with nation-wide audience*120
1	Wavemeter, standard 33
1	RAILROADS.
1	Accidents in 1920
1	Articulated trains*230
1	Australia, in justice to379 Cars: Are they too heavy 7165
1	Cars: Are they too heavy 7165
ı	Car window that will not drop *134 Container system on British
	roads
1	Electrification, world-wide activ-
1	freight-car liner
1	German locomotives for Russia 44
1	Grade-crossing, all-steel *249
	Hand-brake efficiency, increased*61

Howe truss timber bridge. *321 Lost in transit	
	Lost in transit. 257 Motor car of special design. *388 New York's proposed belt rail- way . 44 Noiscless elevated . *46 Observation cars, new . *119 Pekin-Suiyuan Railway in China . *116 Pump-power railroad . *241 Rail-cutter, portable . *132 Rails: Weight and life . 411 Review of the year 1921 . 20 Steel rails, latest in . 44 "Step lively" annunciator . 132 Stopping-place indicator . *61 Train and tow barges, combination . *61 Train in thing in France . 331 Trolley wires, greasing . 100 Turnstile, pay-as-you-enter . *190 Vacuum-bottle milk car . *202 READING. Admiral Fiske's invention . *407 ROADS AND STREETS. See also TRAFFIC. Building a road with a dredge *394 Grünewald race-course . *48 Highways and politics . 378 Illuminated highway . *97 Legislation scientific road . 264 Railroad to highway . *316 Snow sweepers, trolley . *55 Street-eleaning buggy . *130 Tenperature changes curl roads 104 Trees, irrigating roadside . *413 Underpinning , testing . 271 ROCK-CRUSHER cornerless . *202 ROCK-CRUSHER cornerless . *202 Meres . *207 ROCK-CRUSHER cornerless . *202 Meres . *207 ROCK-CRUSHER cornerless . *202 *208 **207 **208 **
	S

Į	Cutting and fitting beneath the waves*302
)	Diving armor *62
	Match that lights under water \$333
5	Ship without a bottom*256 SCALES, testing
)	SCIENCE.
	German scientific books274 Laboratory dish
	Notes74, 144, 212, 282, 352, 432
	Review of the year 1921 21
	Toronto meeting
	SHAVING brush, sanitary*411
	SHIPS. See MERCHANT MARINE;
	NAVAL AFFAIRS. SNOW sweepers, trolley*55
	SPEECH (human) on dissecting table
	STAMP frauds and their detection.*12 STAMP moistener
	T
	TELEPHONE AND TELEGRAPH. American practice from British point of view
1	Lincoln highway of the tele- phone*172
	Long-distance stenography *57
	Rapid transit in telegraph office*119 Revolving 'phone directory*135
	Silent 'phone
	Telephone invention, a new391

Asbestos industry in Canada...
Cotton dyeing, fast...
Eathonian cotton-goods industry
Flax acreage in Ireland...
Rope strength...
Rope, teats of manila...
Waterproofing by electricity...
Wool, moth-proof...
THERMOCOUPLES, improvement

industry in Canada... yeing, fast.....

.271 .344 .329 .319

201

	TIME AND TIME DIRECTOR
302	
*62	Alarm clock, general utility.
333	
256	TOBACCO AND SMOKING AP.
382	PARATUS
	Pipe, breaking in a new20
274	Pipe with a stem at top.
206	
432	Files sharpening by closes to
21	Screw-driver for emergency4
231	TRAFFIC.
386	Automatic regulator
411	
°55	Traffic tangles, untangling
00	TREES. See FORESTS, ETC.
100	TUNNEL ventilator, vehicular. 17, 10
*12	TYPEWRITER for the blind 179
269	TYPEWRITER, making an
200	dresser of the
-	The state of the s
	w
- 1	**
. 1	WATER-POWER AND SUPPLY.
	Colorado project24
93	Cucumber-flavored water
-	Cutting and fitting beneath the
172	Waves
°57	Dam, concrete tower for
119	Hydraulie jump

THEDMOMETERS A.

X-RAYS. Outfit in a hand sate Soft X-Rays..... X-Ray photography. a hand satchel.

The North Atlantic Ice Patrol

(Continued from page 371)

request to all steamships in the vicinity of the Grand Banks to send in their position, course, temperature of sea water, and ice formation. . . . Stood across Grand Bank to the southward and eastward for a berg reported on May 9th. . . . Stood to east-ward and northerly in search of a berg . . . ward and northerly in search of a berg...
running as far north as 44° 30′ without success; subsequently received information that
this berg had been caught in the warm
northerly current and had broken up into
small pieces close to the 45th parallel....
Set course to northward and eastward and on
the evening of the 20th located a berg. Set course to northward and eastward and on the evening of the 20th located a berg. . . . Ran along the eastern edge of the bank dur-ing the 21st, and located a small berg. The weather shutting in thick, drifted. Stood into edge of the bank and anchored with bergs in sight, observing their drift during the 23rd. On the 24th steamed to the north-ward and eastward to observe two reported ward and eastward to observe two reported bergs. Found them just about sunset when fog shut in thick. From the 26th to the 30th worked to westward in dense fog, riding out a northeast storm on the 30th and 31st. Ffifty-six vessels co-operated with the "Talla-poosa," during the first and second ice patrol cruises. All these vessels crossed the Bank, cruises. All these vessels crossed the Bank, or very close to the danger area, and respected the information received. It is worthy to note that the steamship "Cassandra," the only known vessel that failed to cooperate or to heed the warnings sent out relative to danger areas, met with an accident by striking a berg."

Such is the work done day by day and

Such is the work done day by day, and by night, by the vessels of the Coast Guard, during the three months of ice peril off the Grand Banks.

The World's Wages-a Statistical Anomaly

(Continued from page 369)

In Great Britain, even the agricultural laborers are strongly organized, and work but 50 hours a week—an unheard of minimum farm help.

For farm help, we have in this country two rates: "found" and "board out." The latter is used as it seems to be more comparable with foreign practice. In the build-ing trades, averages are taken for New York City where the United States is concerned. The figures would vary for other localities, usually being somewhat less; there is no uniform American rate.

With these explanations, we may say that With these explanations, we may say that the United States carpenters get \$9.00 soon the chemist himself will be unable to per day; in Great Britain, \$3.26; in France, \$2.54; in Belgium, \$1.91; in Japan, \$1.37; in Italy, \$1.34; in Spain (for 1919; no later figures available), \$0.87; of protein substances caused by strong minor China, \$0.30; in Germany, \$0.24. For plumbers there is no serious discrepancy from the above figures, save for

Great Britain, where the plumber, perhaps because of the universal British preference for the old-fashioned "tub," seems to be at a disadvantage. The rates here are, for the United States, \$9.00 again; for France, \$2.54; for Belgium, \$1.67; for Italy, \$1.34; for Germany, \$0.25; while Japan and Spain are missing altogether. For masons and for painters the wages are the same as for carpenters in the United States, Great Britain. penters in the United States, Great Britain, France and Italy. In Spain both these trades receive \$1.06 and in Germany both get \$0.25. The Belgian mason gets \$1.82 and his brother of the brush only \$1.60; in Japan the mason has a similar advantage, of \$1.58 against \$1.36; in China the mason gets 30 cents and the painter three cents

The carpenters seem to be pretty representative of the building trades, both as regards work done and in point of pay received: so we employ them in our graphic comparison of page 369. A wholly different situation exists among agricultural laborers, und calls for a new picture. The figures on which this is based are as follows: the farm aborer in the United States gets \$3.59; in aborer in the United States gets \$3.59; Selgium, \$1.46; in Great Britain, \$1.32; France, \$1.29; in Japan, 89 cents; in Italy, 67 cents; in Spain, 39 cents; in Germany, 16 cents; in China nobody knows how little he does get.

of course, the superficial sum of money paid labor today is universally greater—far greater—than 10 years ago. The French carpenter of 1911 got 9 francs a day, and carpenter of 1911 got 9 francs a day, and now he gets 28 francs. At par, in 1911, he got \$1.73; at 1922 exchange he gets \$2.54. But it is doubtful if his wages have kept pace with prices—if he gets as much food or if his wine is as good as ten years ago.

Wool from Cotton

I T is well known that cotton is used to adulterate wool. Many a woolen garment adulterate wool. Many a woolen gar ntains appreciable amounts of cotton. ordinary person is almost at a complete loss to tell whether a suit of clothes, a drecoat is made of pure wool or not, and only by examination under the microscope that the textile chemist can affirm conclusively the absence or presence of other fibers besides cotton in the garment. Now, there has appeared a patented process whereby cotton is made to assume the properties of cotton is made to assume the properties of and his touch light and skilled, he almost wool not only physically that is to feel, never fails to carry some kind of a lamp appearance and caloric qualities, but chemically as well in its affinity and absorbent capacity toward coloring matters. Pretty soon the chemist himself will be unable to tell the two fibers apart.

These properties are bestowed on cotton of the electric eye is based on the action of selenium. Selenium is a

TEXTILES.

effect the final results.

The proteins that are used are casein, egg albumen, serum albumen and gelatine. Various strong mineral acids, such as 65 to 80 per cent nitric acid, 55 to 65 per cent sulfuric acid, 25 to 37 per cent hydrochloric acid, etc., are used in hydrolyzing agents either alone or in admixture. Time of imtemperature are variable conditions which must be regulated according to the nature of the fiber treated, the particular protein used and the acid that effects hydrolyzation. Variation in temperature from 5 degrees C. below zero to 20 degrees C. above zero has no appreciable influence on the result obtained. The precipitation of the protein substance on the fiber is accomplished by merely washing the treated ma-terial in water. The process may be used on all vegetable fibers, either in the form of varns or as fabrics, and it is also immaterial

hether the fiber is mercerized or not.

An example of how the process is actually carried out is given in the following: slightly ammoniacal solution of casein prepared, containing about 10 per cen cent prepared, containing about 10 per cent of the protein. The fiber is dipped in this solu-tion, dried and then exposed to the vapors of formaldehyde for some time. It is then treated for about two minutes with 75 per cent nitric acid at the ordinary temperature, squeezed out or pressed out and washed. The yellow color of xantho-proteid which is de-veloped by a secondary reaction may easily be removed by treatment with a weak car-bonate of soda solution.

Light Gives the Alarm

OF all the instruments designed to trap Or all the instruments designed to trap
the elusive burglar, a German device,
called "the electric eye," is one of the most
ingenious. Most burglar alarms are caused
to operate by the action of some direct contact, such as pressure on a door or window. The electric eve operates quite independently of any such contact, direct or indirect. The inventor of this alarm has taken advantage of the fact that a thief does not usually work in the dark; though his step may be stealthy and his touch light and skilled, he almost

The cell is inserted in an electric circuit. It is connected up with a special intermediary apparatus, known as the "call," and to another apparatus which is usually spoken of in various mechanisms as the "relay." The call operates with the flow of the current and starts the contact with the bell which gives the alarm. This bell contact may be installed in the room of a watchman; or several alarms may be installed in various part of the house so that the alarm may be given of the house so that the alarm may be given in more than one place. The electric resistance of the selenium cell in the dark operates to cut off the flow of the electric current through the conductor so that the alarm apparatus is put out of circuit until a streak of light falls on it.

of light falls on it.

This brings up the question whether ordinary daylight will not operate to give the alarm. Of course, special care is taken to prevent this. So long as the room is lighted by daylight or artificial light, the sleaning cell is made light-tight by means of a day. When the room is vacated and is left dark the chemical course, it is incontrol into the the electric eye again is inserted into the electric current and the flap over the elenium cell is lifted. Then, because the room is dark, the apparatus is put out of cir.
The device is also operative in a room * is not in absolute darkness, for the susce bility to light of selenium can be regular. For example, if light from a street lamp in a room, the electric eye can be adiate that light so that the electric street. to that light so that the electric current shut off. If additional light is brought in the room, the dim light already there strengthened and the apparatus is put in a eration. Experiments have shown that end the faintest of lights will operate to give the alarm. For this reason, the electric or may be a protection against fire as well a

burglary.

The box inclosing the selenium cell is a hyndre small that it may be hidden in a hundre inconspicuous places, where it will be to observed and where it will work effectively observed and where it will work effective!
It may be placed behind the carved war on a clock, behind a mirror, placed unostetatiously on a pile of papers in a desk, or wherever the imagination of the electriciss may dictate. It may be provided with other protective devices which will operate at the instant the bell contact is accomplished. There may be special protective conduction for safes. There may follow a putting of all lights. Even after the installating improvements may be added to the elect eye. And if the thief happens to know this particular method of alarm, and this particular method of alarm, and

